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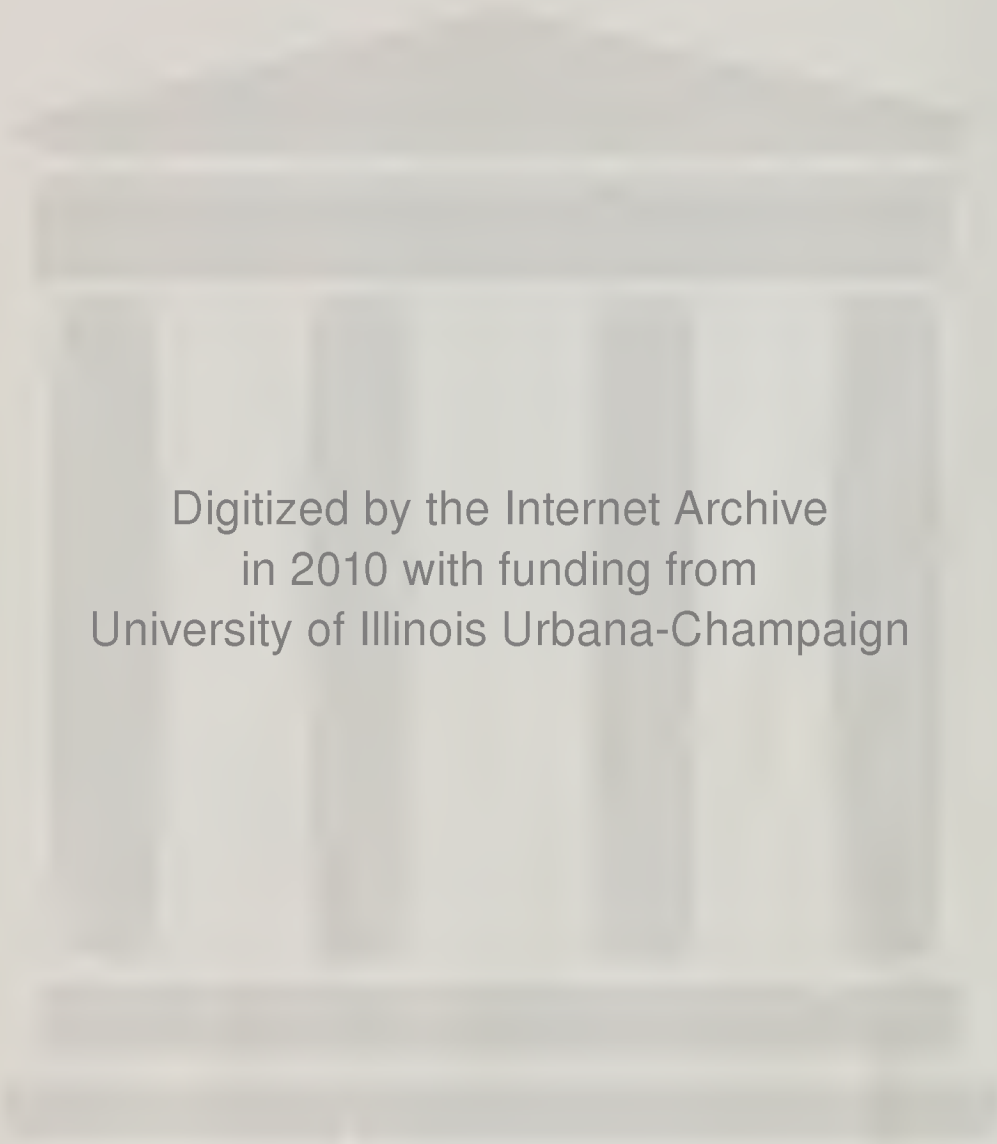
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USER/ENVIRONMENT INTERFACE IN HEALTH CARE SYSTEMS

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Part one deals mostly with the human-behavioral aspects of the care environment; part two contains selected items in applied areas, and includes mostly reference data, methods and techniques, case studies, etc. in planning and design of health care systems and sub-systems.

Introduction

The Expanding Role of Environmental Design

Psycho-social elements in the diagnosis and treatment of diseases are now considered essential aspects of the total patient care.

Modern medicine recognizes that the treatment process is affected by such factors as the social and psychological environments of the patient, which are in turn affected also by the physical and organizational structure of the health care system.

In designing environments for health care as well as other building types - the planners traditionally addressed themselves to the functional aspects of human performance and needs, e.g. optimal floor plan of nursing unit, the design criterion being number and duration of nurses trips; or optimal lighting intensity and distribution, the criterion being human task performance. In both cases, as well as a multitude of similar situations, designers concentrated on factors that lent themselves to quantitative methods of identification, analysis and evaluation, e.g. monetary cost, time, temperature, etc.

Factors such as human psychological stress, adaptation, subjective comfort and preferences were usually relegated to a lower priority order in the design process, if considered at all.

With the growing knowledge of environmental psychology and related disciplines, their methods and findings might be applied to the design process: the effects of the physical environment on the users will be better understood, consequently developing the ability to design, regulate, and control the care environment for optimal benefit.

PART I

1. Impact of Illness & Hospitalization

Hospitalization due to acute illness is described as: "A process accompanied by a sudden and drastic change in the life pattern, characterized by the substitution of a more or less self-regulated active existence, by an enforced passivity occurring in a subjective state of suffering and ill health; it is a strange, friendless and aseptic smelling environment, where bodily functions, habitually exercised in discreet privacy, are now exposed to the indignity of open-season inspection, with a concomitant dislocation of economic, domestic, social and sexual patterns." (Simpson, 1969)

The association of hospitalization with acute illness, the hospital being the last resort after other means have failed, is still a popular concept. It permeates the thinking of the community and the individual patient, and results in regarding hospitalization with misgiving and apprehension.

The patient is subjected to examinations and tests, the purpose of which he does not always understand, even if it is being explained. He is reluctant to ask questions, either because he is afraid of the answers, or hesitates to bother the busy personnel; knowledge of results often leave him with the need to make interpretations of which he is not capable.

Despite the use of sedatives and tranquilizers to combat physical pain and discomfort, intrusive devices such as IV needles in the arm, prolonged bed stay in one posture and other physical discomforts impinge on the patient's state of mind.

The patient has to give up his personal control on important as well as simple functions: what, when and how to eat; keeping windows open, closed or shaded; sitting, lying, or getting up; these and other minutiae of everyday living are no longer determined by the patient and his preferences; most of the routine activities are done by others for him, and the enforced dependence, along with the physical demands of his illness, increase his feelings of helplessness.

The phenomenon of patient "childlike" behavior and submission is a typical transformation that most patients experience to some extent. It is both a defense mechanism and social convention to facilitate the drastic change in norms. However, frequently this temporary transformation deteriorates into regression, with all the attended adverse outcomes.

Being faced with unaccustomed routines and schedules, the patient has to make emotional and social adjustments to new ways of life. Loss of autonomy is accompanied also by breach of social norms regarding privacy, communication, and other behavioral concepts.

These factors are usually recognized, and so is the realization that their cumulative affect can create a significant stress.

However, very seldom are these factors acknowledged by the designers of the patients environment, who could, and should, intervene to effectively minimize stress.

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2. Subpopulations in Crisis & Hospitalization

We need a constant reminder that human nature is variable. Individuality - the qualities that distinguish one person from another - defy typology and universal prescriptions for common problems. Understanding of the potential range (rather than "average") of human responses and needs due to individual differences, is an essential requirement for optimal problem solving. Often it is not feasible to design environments that will accommodate specific user needs, since many environments are designed for short term use of variety of users, like the patient area in a nursing unit.

Yet, knowledge and appreciation of the ranges of users' needs, will enable the designer to provide open options and enough variability in the environment to satisfy a larger spectrum of potential requirements.

Within societies, some groups - or sub-populations - possess some common characteristics which are not shared with the whole society or other societies. These characteristics are largely influenced by cultural and developmental factors. The ways in which individuals think, believe, and act depend largely on the culture and society in which they dwell. It is within these societal boundaries that group life and subsequent interpersonal relationships are structured.

Developmental factors create a different set of sub-populations: the very young, the very old, the handicapped, and others, all perceive and conceive the social and physical environment in different ways.

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3. Social/Psychological Factors in the Health Care Environment

Rapid advances in our knowledge and understanding of physiological mechanisms and causes of disease, and of medical treatment procedures, have caused a relative neglect of the consideration given to the psycho-social aspects of illness, especially in hospital practice.

With the great influx of technology and related human activities in the health care environment, the need to not lose sight of patients as people is even greater. No longer is the cure of the human organism and tissue the only care objective; the restoration of a person to the optimal mental and physical level, compatible with the status of his organism requires consideration of psychological trauma as well as the physiological one.

Functional activities of health care personnel were traditionally a major determinant of physical design and organization. However, as in the patient's case, staff socio-psychological needs are ill defined and thus rarely accommodated.

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Intensive care units are by definition the most complex environments within the health care system. In the recovery room, ICU, coronary care unit, burn unit, etc., the patients are in some stage of critical illness; the physical environment is designed to facilitate life support procedures and the appropriate systems. The latter are taking the form of monitoring devices, oxygen tents, wires, electrodes, defibrillators intravenous tubes; some are literally impinging upon the patient, while other elements are suggestive of the critical nature of the environment. The overwhelming impact of these units on their users present an added, or intensified dimension for consideration in the design of an optimal environment for health care.

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